

BOROUGH OF



COLCHESTER.

URBAN DISTRICT.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR

1904.

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PUBLIC HEALTH DEPARTMENT,

36 STANWELL STREET,

February 22nd, 1905.

TO THE CHAIRMAN AND MEMBERS OF THE COUNCIL.

GENTLEMEN,

I beg to submit, herewith, my Annual Report for 1904, dealing with the sanitary circumstances of the Borough of Colchester, and the health of its inhabitants.

The arrangement of my last years' Report has been adhered to as far as possible. Three out of the four tables supplied by the Local Government Board have been filled up, and are printed at the end of the Report. Table 2 has been omitted in this as well as in last year's Report, since only the required figures for the last 2 to 3 years are as yet available.

The year under consideration has not, from the point of view of infectious diseases, been so satisfactory as last year, or some of the previous years. Measles was widely prevalent in the second quarter of the year, and in July. Scarlet Fever has also been extensively prevalent, particularly during the later months of the year. It has, however, been very mild, and responsible for only 6 deaths.

Whooping Cough has also been extensively prevalent.

Small Pox has, on the other hand, been almost absent, and Diphtheria remains well under control, while, as for former years, there has been but little Typhoid Fever.

The most deplorable event of the year has been the very large number of deaths of children from Infantile Diarrhoea, 77 children dying from this cause. The causation and prevention of this disease is fully considered in the following pages. The increase of the death rate over last year is mainly due to this disease.

From the point of view of sanitary improvements, 1904 has been, on the other hand, a very satisfactory year. The extensive improvements carried out during the year at the Infectious Hospital have added considerably to its value, while the provision of a steam disinfecter will be a great service for disinfection purposes in the Borough.

I regard the institution of School Notification and the Voluntary Notification of Consumption, both of which came into force during 1904, as two very important public health measures.

The measures initiated for the prevention of Diarrhoea, particularly the steps being taken to instruct the children in school, are of far reaching importance, and will, I think, bear abundant fruit if adequately adopted and carried out.

At the end of my Report I submit the Reports which have been sent me by the Borough Surveyor, the Superintendent of the Water Department, and by the Sanitary Inspector.

In my work I have received the greatest assistance from the Staff of my Department. In particular, I would express my appreciation of the very valuable work done by Miss Braidwood, who has, with great skill, coped with the many difficulties inherent to Infectious Hospital work in general, and those peculiar to our Borough Infectious Hospital, and to Mr. Wells, your Sanitary Inspector, who has been of great assistance to me in the special Reports made to you, as well as in routine work. I also wish to express to the Sanitary Committee and the Town Council my appreciation of the continued support which they have given to public health work, and to any considerations in regard to the health of the inhabitants of this Borough which I have ventured to bring before them.

I am, Gentlemen,

Your obedient Servant,

WILLIAM G. SAVAGE,

Medical Officer of Health.

POPULATION AND AREA.

The estimated population to the middle of 1904 is 39,700. This is estimated by the method of the Registrar General, which assumes that the rate of increase of the previous intercensus period is being maintained.

The number of new houses erected during 1904 was 188. The average number of persons per house is 4.9 for Colchester. This would represent an increase of 921 inhabitants, giving the population for the middle of 1904 as 41,220.

The natural increase, or increase of births over deaths for the year is 363.

It is probable that the population is somewhat in excess of the official estimate of 39,700, but this figure is taken as the basis of all calculations for the sake of uniformity and to enable comparisons to be made with earlier years.

This figure includes the garrison and their families living in barracks. The average daily strength of the garrison for 1904 was 3,956, *i.e.* officers and men, 3,273, women 258, children 425. I am indebted to the kindness of Colonel Slaughter for these figures.

For 1903, however, I estimated the civilian population, for reasons given in my Annual Report for that year, at 36,030. The average Military population has remained almost identical for 1903 and 1904, so that the true civilian population may be estimated at 36,430.

The estimated populations for the different wards have been calculated from the new houses erected in each ward. The figures are North 6, South 39, East 65, West 78 houses, exclusive of 53 additions to houses.

The area of the Borough is 11,324 acres.

BIRTHS.

The total number of births registered in the Borough for the year was 1,033.

This is equivalent to a birth rate of 26.02 per 1,000 inhabitants.

This rate is very slightly below the average for the past nine years, which works out at 26.1.

The actual number of births registered is the highest since 1895.

Of the 1,033 births 527 were males and 506 females.

The births for the four quarters of the years were respectively 265, 246, 264, 258.

For the different wards the births were, respectively, North 159, South 368, East 288, West 218.

Of the births 31 were illegitimate children, forming 3 per cent. of the total births.

DEATHS.

The total number of deaths registered in the Borough for 1904 was 670, giving 16.87 as the *crude death rate* per 1000.

The crude death rate has to be corrected. The deaths of residents who have died outside the Borough have to be added, and those who died in the public Institutions of the Borough but belonging to beyond the Borough, have to be deducted.

I have received information as to one such death of a Colchester inhabitant outside the Borough, and 41 non-residents died within the Borough and public institutions.

The corrected number of deaths is therefore 630, and the *corrected death rate* is 15.86 per 1000.

Twenty deaths took place among the military population.

The corrected death rate for the whole population offers the best basis for comparison with previous years. The figures for 1896 onwards are given in Table I. of the Local Government Board (see end of this report).

From this table it will be seen that the corrected death rate for 1904 is considerably higher than the very low death rate (12·7) of 1903, while it is also above the average for the 8 years, 1896-1904, which is 14·8.

As compared with 1903 there was an increase of 24 deaths from the Notifiable Infectious Diseases, and 74 from Diarrhoea and Enteritis.

The increased death rate is very largely due to the great number of deaths (88) from Diarrhoea and Enteritis, and if there had been only the same number of deaths as in 1903 from these causes, the death rate would have been only 13·9.

With regard to the causes of death these are set out in Table IV., stated in brief, 3·3 per cent. were due to the ordinary notifiable Infectious Diseases, 4·6 per cent to Measles and Whooping Cough, 10·8 per cent. to Phthisis and other Tubercular Diseases, 6 per cent to Malignant Disease (Cancer), 11 per cent. to Bronchitis and Pneumonia, 8 per cent. to Heart Disease, 14 per cent. to Diarrhoea and Enteritis, and 42 per cent. to all other causes.

The death rate for the different Wards is shown in the following table, considering the civilian population only—

<i>Ward.</i>	<i>Estimated Civilian Population middle of 1904.</i>	<i>Deaths (Civilian Population).</i>	<i>Death Rate.</i>
North	7,522	115	15·3
South	12,050	190	15·7
East	9,267	182	19·6
West.....	7,591	123	16·2
	36,430	610	16·7

These Ward populations can only be considered approximate estimations. The death rates for the different Wards are of interest, but cannot in themselves be taken as indicating the relative healthiness of the different Wards. This is at once shown, when it is noticed that the death rate for the East Ward is for 1904 higher than the others, while for 1903 it was the lowest, *i.e.*, 11·9. The explanation of this lies not in any sudden alteration of healthy or unhealthy conditions in this Ward, but to the fact that, compared to population, the Diarrhoea mortality was heaviest in this Ward and so sent up the death rate. (See Table IV.) There are a large number of infants and young children in both the South and East Wards, and the death rate for any district is of course greatly influenced by the age and sex distribution of its inhabitants. I have not the data available to make the necessary corrections for this factor.

Deaths in Public Institutions—

<i>Institutions.</i>	<i>Residents.</i>	<i>Non-Residents.</i>	<i>Total.</i>
Essex and Colchester Hospital	20	17	37
Mile End Infectious Hospital	9	0	9
Colchester Workhouse	47	2	49
Eastern Counties' Asylum.....	0	22	22
	76	41	117

The ages of those who died in the Borough during the year were as follows—

182	or 28·9	per cent.	under 1 year of age.
74	„ 11·8	„	over 1 year and under 5 years.
20	„ 3·2	„	„ 5 years „ 15 „
33	„ 5·2	„	„ 15 „ „ 25 „
161	„ 25·5	„	„ 25 „ „ 65 „
159	„ 25·2	„	„ 65 years and upwards.

INFANTILE MORTALITY.

The number of deaths under one year was 182, or nearly 30 per cent. of the total deaths.

The *rate of Infantile Mortality* is measured by the proportion of deaths of infants under one year of age to every 1,000 births. This is the most reliable basis for comparison, and is uninfluenced by any possible error in estimating the population.

Measured in this way the rate for 1904 was 176. Table I. shows that the average rate for the nine years (1895-1903) was 134, so that this rate is greatly above the average, and is the highest since 1895, when it was 186.

It is a well recognized fact that although the death rate throughout the country has markedly diminished during the past 50 years, the deaths of infants under one year of age have shown little or no diminution, but remains deplorably high.

The results of experience and elaborate investigation alike show us that much of this infantile mortality is preventable, and that much of it is due to want of knowledge and want of intelligent care on the part of mothers.

The increase of these infantile deaths over last year is entirely due to the increase in deaths from Diarrhœa and Enteritis. If these deaths had been the same as 1903 the infantile death rate would have been 120, or slightly below that of 1903. This question can therefore be better considered later under Diarrhœa deaths.

The other chief causes of death among infants are shown in Table IV.

THE NOTIFIABLE INFECTIOUS DISEASES.

In Table III. (Local Government Board) page 22, these are tabulated in detail for 1904, while in the two following tables the number of cases notified since 1896, and the deaths from some of the infectious diseases are recorded.

Infectious Diseases notified 1896-1904.

	1896	1897	1898	1899	1900	1901	1902	1903	1904
Small Pox	0	0	0	0	0	1	3	24	1
Scarlet Fever....	131	256	62	93	69	50	47	100	257
Diphtheria	40	31	64	38	87	287	162	54	56
Croup	1	4	3	1	4	1	0	1	0
Typhoid Fever ..	16	28	20	26	23	28	9	17	17
Typhus Fever ..	0	0	0	0	0	0	0	0	0
Erysipelas	78	86	44	55	68	48	25	46	38
Puerperal Fever	2	2	2	1	3	1	1	0	3
	268	407	195	214	254	416	247	242	372

Deaths from Infectious Disease registered in the Borough, 1896-1904.

	1896	1897	1898	1899	1900	1901	1902	1903	1904
Small Pox	0	0	0	0	0	0	1	5	0
Scarlet Fever....	1	7	0	1	1	0	1	1	6
Diphtheria	7	5	23	10	14	38	15	5	7
Croup	0	3	2	1	2	1	0	0	0
Typhoid Fever ..	4	8	8	7	3	4	2	2	4
Typhus Fever ..	0	0	0	0	0	0	0	0	0
Erysipelas	3	3	1	1	5	4	0	0	2
Puerperal Fever..	2	1	2	0	2	1	0	0	2
Measles	4	1	16	26	2	29	2	6	12
Whooping Cough.	2	5	33	18	4	14	10	7	17

SMALL POX.

Only one case of this disease was notified during 1904. The patient was notified February 27th, and removed to the Small Pox Hospital the same day. Elaborate precautions, including vaccination or re-vaccination of contacts, were taken to prevent the spread of infection, and no fresh cases resulted. The patient had a severe attack, but quite recovered. He showed no vaccination marks. I could not ascertain the cause of infection.

For the 7 years, 1895-1901, 6897 births were registered, 4182 of these were successfully vaccinated, 697 died unvaccinated, and 2,018 were unvaccinated. Excluding the 697 who died unvaccinated, 67·5 per cent. of the remainder were successfully vaccinated, and 32·5 per cent. were unvaccinated. No doubt some few of these were vaccinated subsequently to their first year, but it is probably true that (for the 7 years, 1895-1901) at least 30 per cent. of the young population is unvaccinated. In the light of these figures Colchester cannot be considered a well vaccinated town.

CHICKEN POX.

During the year 116 notifications were received from medical men, while in addition a large number of notifications were obtained on the school notification forms, and some from parents. More than half of the notifications from medical men were received in the last quarter of the year, and during that quarter this disease was rather prevalent. Notification was compulsory throughout the year.

SCARLET FEVER.

258 notifications of Scarlet Fever in all were received. Two of these notifications were subsequently withdrawn. In addition 2 cases notified as Diphtheria and admitted to the Infectious Hospital were cases of Scarlet Fever. This makes the total still 258. One of these, a child who died in the Hospital certainly did not have Scarlet Fever, and must be excluded. The total number of cases therefore is 257. Among these cases there were 6 deaths. This gives a case mortality of 2·33. The disease was prevalent for the greater part of the year. There were only 3 cases in January, but for the following 6 months the cases were respectively 18, 18, 21, 24, 17 and 13. During August 7 cases were notified, but 6 of these were among the Military population and only one civilian case. From July 24th to September 2nd, nearly 6 weeks, only 2 cases of Scarlet Fever were notified among the civilian population, so that except among the Military, where 6 cases were notified, the outbreak died out. In September, however, it began again, and much worse than before, and continued prevalent until the end of the year. The notifications for the last 4 months of the year were respectively 37, 37, 33, 29.

The outbreak, therefore, naturally divides itself into two distinct periods, that from the end of January to nearly the end of July, 121 cases, and that from September to the end of the year, 136 cases. Why did the outbreak practically cease for these 5½ weeks? An examination of the dates of the school holidays is of interest here. In April and in May a week's holiday was given. In each case only a week and no influence on the incidence of Scarlet Fever is to be notified. The main school holidays—summer holidays—commenced July 30th, and the children returned to school August 29th. The period of freedom from this disease coincided exactly with the school holidays, and the return to school was rapidly followed by a markedly increased outbreak of Scarlet Fever, the cases in September being for week ending 10th, 5 cases; 17th and 24th, 8 cases each week; and for week ending October 1st, 12 cases. Turning to the Christmas Holidays we see very much the same thing. The school holidays began December 24th, and the children returned January 8th, 1905. For the weeks ending December 3rd, 10th, 17th, and 24th, the Scarlet Fever cases had been respectively 8, 7, 7, 7. For the week ending December 31st, there was but 1 case; for the week ending January 7th, 1 case. For the week ending January 14th, the cases had risen to 3, and for the weeks ending January 21st and 28th, 1905, to 7 and 8 cases respectively. Here the school holidays were a period of comparative freedom from Scarlet Fever. These rather striking results seem capable of explanation on two suppositions. The first and most obvious one is that the disease was abruptly checked because it was being spread by aggregation of children at school, and when this was removed the infection at once ceased. The other supposition is that while at school the school children are subject to supervision, and their absence is made the cause of enquiry and, if necessary, investigation, so that cases of Scarlet Fever even if mild are usually, sooner or later, and generally sooner, brought to light. It is quite possible, and I have considerable evidence to show that it has taken place, for children to have an attack of Scarlet Fever

during the holidays, and then to return to school peeling and infectious, but not supposed to have Scarlet Fever. In this way the return of the children would light up a fresh outbreak. On the one supposition the cessation of school stops the epidemic on the other the return starts it because unrecognised cases, unsupervised children, return infectious. In both suppositions school influence is predominant, and I am not prepared to say how far either is the true one here, probably both are important and play a part. I have mentioned the matter fully because it is of much importance. I do not think the latter hypothesis is generally considered, and if it be true it points to the great importance of a rigid inquiry of all scholars when they return as to illness or indisposition during the holiday, with a careful medical examination of all suspicious cases.

It might be supposed, the influence of school attendance being so pronounced, that the outbreak might have been limited if not checked by closure of some of the schools. The possible advisability of this step was kept in mind throughout. Very special attention was given to this question of school influence, and for every case the school attended, and the class, and the Sunday school were recorded in special books, so that this influence should not be overlooked. In only one instance, however, did such careful inquiry lead me to think school closure was necessary, and any school measure more drastic required than exclusion of the children from the affected house from school. This was part of Kendall Road School, and was closed for a time under your directions.

In regard to the schools attended. In the first part of the outbreak, January to August, of the 121 cases 14 were Military and 29 were secondary cases, that is a second case in the same house, so that the cause of infection was direct and obvious. Of the remaining 78 cases, 12 did not go to school, 16 went to the Wesleyan school and 26 to one or other of the other schools. In the second period, September 1st to end of the year, of the 136 cases 5 were Military and 24 secondary cases. Of the remaining 185 cases, 18 attended Barrack Street, 23 North Street, 15 Kendall Road, and 26 one or other of the remaining schools. The cases from any one school were for the most part scattered over a considerable period of time.

Of the 60 cases of Scarlet Fever under five years of age, 40 were primary cases (*i.e.* the first case affected in the house), and 23 of these were attending school. The majority of these were traceable to direct infection at school. I regard it as most undesirable that these young children and even children up to six years of age, should be allowed to go to school at all. They learn very little, and there is a large amount of medical evidence available showing that much harm results from the strain put upon their undeveloped brains and particularly their undeveloped eyes.

Accurate medical investigation has repeatedly demonstrated the harm the needlework drill and other eye-straining work does to the eyes of these infants. It must be remembered that many of these children are weak and ill-nourished, and they require all their vital energy for their bodies. All this apart from the question of their liability to acquire infectious diseases at school. This is also important, because considering Scarlet Fever alone, it is a well ascertained fact that early childhood is the most susceptible period as regards acquiring Scarlet Fever while its severity is in general greatest in the first few years of life, and diminishes as age increases. There is, therefore, a double gain in protecting children from infection during the first few years of life. Every year after the fifth year makes such children less susceptible, while if they are attacked every year that the attack is ward off reduces the chance of dying and of dangerous complications. I know of no compensatory advantages which can in any way weigh in favour of the attendance of these infants.

Of the cases of Scarlet Fever 154 were removed to the Infectious Hospital. Of the cases not removed 18 were among the Military. In regard to the efficiency of isolation at home, in 18 cases the patient was the only child, so these cases cannot be considered in this connection. In 45 cases there were other children in the house; in 30 of these no second case took place, in 15 cases there was one or were more other cases in the same household. Of these 15 cases however, in 11 the onset of the second case was within a week of the onset of the first, and generally within a few days of isolation precautions being started, and almost certainly all these 11 cases were infected before proper isolation was enforced. In only three cases was the second case due to faulty isolation, the dates of onset being respectively 24, 13, and 15 days after the first case. These facts are important as showing that it is quite possible to isolate the majority of *selected cases* at home. In only three out of 45 cases (6.6 per cent.) did it break down, as far as infection of other members of the household can be taken as a guide.

The great value of hospital isolation for Scarlet Fever is not in its indiscriminate application but

to remove cases from houses or areas where isolation is impossible, and the risk of spreading the disease very great. For such cases it is invaluable.

In regard to the type of the disease it was mild throughout, but was distinctly milder in the autumn outbreak. For the January to August cases there were four deaths with a case mortality of 3·3 per cent. For the September to December cases there were two deaths, both in the same family, and with a case mortality of 1·47 per cent. The relative mildness of the disease is shown in another way: during the year in three or four cases the first case was not recognised until a second case had taken place in the family, while in addition in 10 separate families the cases were not discovered until they were peeling freely, the disease being then either notified, or my attention being drawn to the children by the school teachers, and the condition discovered on my visiting the house. The cases further exemplify the relative mildness of the second outbreak since only two of them took place in the first group (January—August) but 8 in the autumn group of cases, *i.e.*, more than $3\frac{1}{2}$ times as numerous per 100 cases.

It is these mild cases either only recognized when peeling, or possibly unrecognized throughout, which spread the disease and make a mild epidemic almost impossible to control. The interval between onset and notification in these ten cases was, as far as could be ascertained, for each 18, 25, 8, 11, 11, 17, 25 days, 5 weeks, 10 and 26 days respectively. These cases must be considered actively infectious, for all these respective periods and most of them were moving freely about for some time while so infectious. One such case was obviously a case of wilful suppression of the facts, and legal proceedings were instituted under the directions of the Sanitary Committee, and the father was convicted and fined.

DIPHTHERIA.

During 1904 there were 58 cases of this disease notified. Two were, however, cases of Scarlet Fever, and showed no evidence of Diphtheria on further examination. They are included in the Scarlet Fever cases. There are, therefore, 56 cases in all to consider, or one more than for 1903. Since all the military cases were not notified during 1903, the actual number of cases in the town is distinctly lower than for 1903. Of these 16 belong to the Military population. During the year there were seven deaths, giving a case mortality of 12·5 per cent. In regard to these deaths the following particulars are of interest from the point of view of antitoxin administration.

Case I. Male, age 3 years. Notification only received on 5th day, no medical man being called in until that day. Child too ill to be removed. Antitoxin given, but child died within a few hours.

Case II. Female, age 6 years. Ill for five days before notification and only then antitoxin given. Died in the Infectious Hospital.

Case III. Male, age 4 months. Antitoxin only given on 5th day. Improved in Hospital, but died 25 days after admission.

Case IV. Male, age 14 months. Died after two days illness. No antitoxin given. Symptoms very acute, and unlike Diphtheria.

Case V. Male, age 3 years. Antitoxin only given on 5th day when nearly moribund. Died next day.

Case VI. Male, age 21 months. Died on third day and before notification was received. Antitoxin given only a few hours before death.

Case VII. Male, age 6 years. Ill for ten days before death, but symptoms only acute a few days before death. Antitoxin only given the day before death.

These figures illustrate the importance of the *early* administration of antitoxin. In these cases antitoxin was either not given, or given only on the 5th day or later, in all the cases except one, when it was given on the third day to a baby then extremely ill.

For 30 of the cases which recovered, of which I have particulars, antitoxin was given in 25 of the cases after either one (3 cases), two (12 cases), or three (10 cases) days' illness.

The grouping of the cases as regards season of occurrence is interesting. If the military cases are excluded the incidence on the civilian population for the first nine months was extremely low, there being only six cases notified in the first quarter, five in the second, and five in the third, only sixteen cases for the first nine months. During the last three months there were 24 cases.

A very large number of these 40 civilian cases were isolated cases. Six were cases from Old Heath, in two instances groups of three cases could be connected, and in December a group of six cases were more or less closely associated. The remaining 22 cases were more or less isolated ones, and no connection could for the most part be traced to other cases, nor the ways of transmission ascertained, although very careful personal inquiries were made.

In every case all other children in the house and any children who had come in contact with the patient, had their throats examined bacteriologically to ascertain if any Diphtheria bacilli were being harboured by them.

In several instances unrecognized cases were discovered in this way, and shown to be cases of Diphtheria. These also showed some symptoms of Diphtheria, or a history of having been unwell.

Excluding these cases which have been included as Diphtheria, 114 contacts were examined bacteriologically, of these in only one (0.88 per cent.) was the Diphtheria bacilli present.

This case was isolated in the Infectious Hospital until the throat was free from the bacilli, it not being worth while to re-open the Isolation Home for one case.

In last year's report in 19 cases Diphtheria bacilli were present in the throats of these contacts, or 19.8 per cent.

The difference is very striking and remarkable, and not very easy to account for. It is, however, very satisfactory, and points to a restricted distribution of the bacilli. One factor in its production is, I believe, due to the fact that the cases are notified earlier than formerly, and that the cases for removal are taken away and swabbing of the contacts done at the earliest possible date, so that opportunities for the spread of the bacilli are restricted.

The case mortality is rather higher than for last year. This is mainly due to the fact that in December there was an outbreak of extreme virulence, the symptoms being laryngeal in character and the disease very fatal. Out of six cases notified between December 13th and December 23rd, no less than 4 died, in three the symptoms developed so rapidly that they were dead before the notification was received.

All the cases admitted to the Infectious Hospital were not discharged as free from infection until three consecutive bacteriological examinations showed no Diphtheria bacilli.

It is satisfactory to note that in not a single instance have I been able to trace any return cases, *i.e.* persons developing the disease after coming in contact with a patient discharged from the Hospital. Also in no case has Diphtheria subsequently developed in contacts of the cases after they have been examined bacteriologically.

For these purposes the Public Health Laboratory has been invaluable. Without a bacteriological examination of the throat, it is absolutely impossible to say when a person who has had Diphtheria is free from infection, and it is equally impossible to affirm that children who have come in contact with the case may not be harbouring the bacilli of Diphtheria without direct bacteriological examination.

The time Diphtheria bacilli may persist in the throat is most variable.

TYPHOID FEVER.

Seventeen cases were notified, exactly the same number as were notified in 1903. Of these, two were cases in the Essex and Colchester Hospital, from Nayland and Rowhedge respectively, and so do not belong to the Borough. One was a military case, and there was also a military case not notified to me. This patient died in the Military Hospital. In addition, 3 other deaths took place from Typhoid Fever, giving a case mortality for the civilian cases of 18.7.

Typhoid Fever is usually most prevalent in the autumn, and 7 cases were notified in August and September, the other 10 cases were notified, however, in the first 4 months of the year, except 1 case in December. In regard to the sources of infection, two were apparently connected with decomposing refuse or offal, in their immediate vicinity. One was apparently due to the consumption of infected fried fish. One was due to direct infection from another case. In 3 of the cases the evidence pointed strongly to shell-fish being the cause of attack, in a fourth it was a possible but unlikely cause.

In none of the cases has there been any history of Colchester "natives" having been eaten, nor any evidence connecting Colchester Pyfleet oysters with Enteric Fever.

Among the cases notified as Typhoid Fever and included in the above, were two cases which were not really Typhoid Fever, but a fairly recently discovered disease called *Paratyphoid Fever*. These cases are rather rare, but they are of considerable importance. The symptoms are quite indistinguishable from those of Typhoid Fever, but they are not due to the typhoid bacillus at all, but to another microbe, the paratyphoid bacillus, an organism closely allied or identical with the cause of many of the outbreaks of meat poisoning. These cases were only recognized by bacteriological means. It is important to recognize these cases because not only are they treated somewhat differently, but also the causes of the disease are different, while they can never originate Typhoid Fever. These cases were fully investigated in the Public Health Laboratory, as we require more detailed knowledge of the bacteriology of these cases and how they are caused, and especially from the point of view of outbreaks of meat poisoning. It is noteworthy that in one case the patient was a pork butcher.

MEASLES AND WHOOPING COUGH.

No less than 12 deaths from Measles, and and 17 from Whooping Cough took place during 1904 within the Borough. A glance at the table on page 4 will show that these two diseases are responsible for many deaths in the Borough, as many as 43, 44, and 49 dying in 1901, 1899, and 1898 respectively from these two causes combined.

This heavy mortality is very largely an unnecessary mortality, and, as pointed out in my last year's Report, is mainly due to the belief that they are trivial in nature, and consequently adequate care is not exercised by parents when their children are suffering from one of these diseases.

To reduce the mortality, we must obviously on the one hand try and prevent children acquiring these diseases, and on the other we must induce the parents to treat these diseases with greater respect.

In regard to the first problem, it is extremely difficult to prevent the spread of these diseases by any administrative means whatever, the fact that these diseases are infectious *before* they can be diagnosed with certainty, being, perhaps, the main stumbling block.

Scheduling them under the Notification Acts is extremely costly, and has been abandoned almost everywhere where it has been tried, as being of but little use in controlling these diseases.

Both diseases, particularly Measles, are mainly spread by school contact, also many of the cases are never seen by medical men. Some form of School Notification of these diseases should be of considerable value.

Acting on my advice, and after due consideration by the Sanitary and Education Committees, the Council approved of such a form of notification, and School notification of Whooping Cough, Measles, Chicken Pox and Mumps was adopted.

Special forms are printed by the Sanitary Committee, and are supplied with addressed envelopes to the Head Teacher of each School. Any cases of these diseases known or suspected to be present are reported, the particulars supplied giving the name, age, address, class and department, infectious disease and reasons for belief. Such forms are sent to me at the end of every week, or not later than Monday morning of the following week. In addition the forms are used to notify suspected individual cases on any day of the week.

In this way not only is the distribution of these diseases in the schools known with considerable accuracy, but also by the exclusion of individual children, from information received in this way, the spread of these diseases have been controlled to an appreciable extent. Several unnotified and unrecognized cases of Scarlet Fever have been brought to light by the same means.

I regard the introduction of this form of school notification as one of the most valuable of the health measures adopted during the year.

Naturally, since teachers are not trained to recognize infectious diseases, mistakes are common, but these are generally rectified subsequently when the cases are visited.

This school notification came into force on March 1st.

Measles became suddenly very prevalent in the Roman Catholic School at the end of April, and the school was closed for four weeks. During May and June it was prevalent, and two other schools were then closed for four weeks. It was also widely prevalent during July, and another school was closed for three weeks. Since August the Borough has been almost entirely free from Measles.

Whooping Cough was also prevalent in the spring and early summer. Only one school was closed on account of this disease.

The deaths from Whooping Cough were mainly among babies, 14 of the 17 deaths being in children under one year of age.

Precautions against the spread of Measles and Whooping Cough, and pointing out the high mortality from these diseases, were printed and distributed to a certain extent, but they were not available sufficiently early to be of much avail during 1904.

INFANTILE DIARRHOEA.

During the year no less than 80 deaths were due to Diarrhoea, 77 of them being in children under five years of age.

8 deaths were also due to Enteritis, 6 of these being under five years of age. These Diarrhoea deaths under five years, 77 deaths, were all, or almost all, as far as could be ascertained, due to Infantile Diarrhoea, or as it is also called Zymotic or Epidemic Enteritis.

It is not possible to compare accurately these figures with those of previous years, since the nomenclature of these diseases has altered during the last few years to a considerable extent. Taking Diarrhoea and Enteritis together, that is including some deaths not due to Infantile Diarrhoea, the number of deaths from these two diseases is higher than for any year during the past 10 years, the two next highest being the 43 deaths in 1899 and the 39 deaths in 1895.

77 deaths resulted from Infantile Diarrhoea, a disease eminently preventable.

In regard to its epidemic presence the two main factors are temperature and dryness. In summers that are cold and rainy there is but little Epidemic Diarrhoea; in summers such as that of last year the disease is very prevalent, and this disease was prevalent all over the country during 1903, causing an alarming and terrible mortality, especially in the large towns.

The disease is almost confined in its ravages to the third quarter of the year. It almost entirely affects children under two years, and particularly children under one year of age. Of the 77 deaths, 54 were under one year, and all but 4 under two years of age.

The epidemic started in July, the first death being on July 14th. During July there were 19 deaths, 48 in August, 8 in September, and 1 each in November and December. Thus 75 deaths, or over 97 per cent, were in the third quarter of the year.

The close association with the hot dry summer weather is obvious. A high temperature and dryness are not the causes of the disease, but only the factors which allow the true cause or causes to operate.

The immediate cause of Diarrhoea, almost certainly a bacterial one, has not been ascertained with certainty, but all workers unite in ascribing it to infection of the *food*. There are two views as to the *place* of the food infection, the one view ascribing it to infection of milk before it reaches the consumer, the other to the infection of the food (milk or otherwise) by the unknown cause or causes *while in the house* of the consumer. On the one view the essential danger is at the farm, on the other it is at the house of the consumer. This latter view is almost certainly the true one, and without doubt is so for Colchester, because—

(1) A great many of the children who died from the disease had never tasted fresh cows milk at all.

(2) The milk of those who suffered was derived from many varied sources, and was the same milk as that supplied to many children who did not suffer from diarrhoea.

(3) Before the outbreak, I had just finished a special investigation of the whole milk supply of Colchester, almost the entire milk supply being derived from farms and cowsheds within the Borough, and I have satisfied myself that all the milk is sold here the day of milking, so that there is no opportunity for prolonged contamination and germ multiplication to take place before delivery.

The bacterial cause of the disease may in some cases have been derived in the first place from the farm, due to insufficient care being exercised in milking, but I have no hesitation in saying that the essential reason why the milk or other food became infectious was due to the conditions under which it was kept and used, whether the actual cause was derived from outside the house, or from within, in the first place.

The disease is undoubtedly due to bad and dirty feeding, combined with absence of proper storage room for food and means of preventing infection. The actual infection of the food probably takes place through dirty hands and dirty manipulation, while also it is carried to a considerable extent by dust, flies, etc.

An investigation was made of the method of feeding, and other particulars of all these deaths. In order that control figures should be available for comparison, whenever the Sanitary Inspector, or myself, was for any reasons unconnected with Diarrhœa in any house containing a baby under one year of age, inquiries were made as to the methods of feeding used. Such inquiries were in houses of a quite similar class, and among a quite similar population, and are therefore comparable.

In regard to the methods of feeding, the results of such an inquiry yielded the following particulars :—

Feeding of Children under One Year of Age.

<i>Method of Feeding.</i>	<i>Infants apparently healthy. No Diarrhœa.</i>			<i>Infant Deaths from Diarrhœa.</i>		
	<i>Number of Infants</i>		<i>Percentage (under 1 year.)</i>	<i>Number of Infants</i>		<i>Percentage (under 1 year.)</i>
	<i>under 6 months.</i>	<i>6 to 12 months.</i>		<i>under 6 months.</i>	<i>6 to 12 months.</i>	
Breast Fed entirely	21	9	60	1	0	2
„ „ and other food . .	2	5	14	2	2	8
Fresh Cow's Milk alone . . .	4	1	10	5	5	21
„ „ with foods, etc.	0	1	2	4	6	21
Condensed Milk alone . . .	3	3	12	12	3	31
„ „ with foods, etc.	1	0	2	3	5	17
	31	19	—	27	21	—

This table can be stated with less detail, and so more simply, as follows :—

<i>Method of Feeding.</i>	<i>Healthy Infants.</i>	<i>Infants killed by Diarrhœa.</i>
	<i>Percentage.</i>	<i>Percentage.</i>
Breast-fed, entirely or partially..	74	10
Cow's Milk, entirely or with other food	12	42
Condensed Milk entirely, or with other food	14	48

The preponderating influence of hand feeding is here very obvious. Only 26 per cent. of the infants which did not have Diarrhœa were hand fed, as compared with 90 per cent. of those who died from Diarrhœa.

The kind of feeding bottle used is one of the factors of considerable importance. Of 51 children who died from Diarrhœa, and who were fed by bottle, 42 (82 per cent.) used a long tube bottle, and only 9 a boat-shaped bottle. The latter have no long tubes. It is quite impossible to keep the bottles with a long indiarubber tube clean. Germs multiply in the traces of milk unavoidably left in the tube, and so gain access to the fresh milk added, and in this way set up Diarrhœa. Their use should be discouraged in every way possible. The importance of saving these deaths from Infantile Diarrhœa is being realized all over the country, while the steady decline in the birth-rate makes the saving of these

infant lives a matter of national importance. It should also be clearly recognized that these unnecessary deaths are not the only toll which careless and untutored ignorance exacts from our infant population. Many infants that suffer from bad feeding do not die. Death is the most severe result, and a great number of infants, although they escape the maximum penalty, are yet seriously and permanently injured. It is difficult to over-estimate the detrimental effect on the health, wealth, and prosperity of the country by the constant addition to its numbers of children born perfectly healthy, yet because of the evil conditions which surround their early lives, and especially the faulty feeding at the start, doomed to grow up incapacitated and inefficient.

Lines of prevention against this disease can be pursued along several lines.

Immediate and direct measures would be, increased municipal and domestic cleanliness. Thorough flushing of streets and courts with water is most beneficial, especially in the hot summer weather. All flies and the conditions which favour the breeding of flies should be attacked. Endeavours should be made to provide adequate provision for the storage of food in all houses.

In my special report on the outbreak of Diarrhœa I mentioned that in 50 houses where there had been a death from Diarrhœa in only four was there a separate larder with a window opening into the outer air. In the other 46 there was merely a cupboard, unventilated and unlit, opening into the kitchen or living room, generally under the stairs, not infrequently built alongside the fireplace, usually full of flies, and *thus affording the best conditions for food to develop harmful properties*. It is further to be noted that these were not in the old houses of the Borough only by any means, but were houses many of which have been but very recently constructed. In a good many new houses no separate larder is provided.

After consideration of my report the Sanitary Committee forwarded a copy to each architect and builder, directing attention to the observations as to the need for providing proper larder accommodation in a suitable position in each house, with a window communicating directly with the open air; and asking that the Medical Officer's observations and recommendations may receive consideration.

Obviously the most important line of prevention is the instruction and education of the mothers. If parents would but feed their children properly the number of deaths would be very greatly diminished.

In my report I strongly advocated instruction in these matters and in elementary hygiene to the elder girls in the schools under the control of the Colchester Council. This was referred to the Education Committee and favourably received by them, and the matter is under their consideration.

Another recommendation approved by the Council and now being carried out is that a leaflet giving printed advice to parents be issued. Copies of all birth registrations are sent to me, and this leaflet is sent to all parents when the child is a week or two old. Additional circulars giving further advice will be sent just before the Diarrhœa season.

It is hoped in this way to sensibly diminish the mortality and suffering from this very fatal malady.

TUBERCULAR DISEASE.

During the year 48 deaths from Phthisis and 37 from other varieties of Tuberculosis were registered within the Borough. Of these 17 do not properly belong to the Borough and must be excluded, *i.e.*, of Phthisis deaths, Eastern Counties' Asylum 6, Essex and Colchester Hospital 1; of deaths from other tubercular diseases, Eastern Counties' Asylum 9, Essex and Colchester Hospital 1. Excluding these 17 deaths, 41 from Phthisis (Consumption) and 27 from other tubercular diseases properly belong to the Borough.

During 1904 there were 630 deaths among residents, so that 10·8 per cent. of the total deaths were due to Tuberculosis.

The deaths from Consumption, and some of the deaths from Tuberculosis, for the past 10 years are set out in the following table:—

<i>Year.</i>	<i>Total Deaths from Phthisis.</i>	<i>Deaths from Phthisis (excluding the Asylum Deaths).</i>	<i>Deaths from other varieties of Tuberculosis (excluding Asylum Deaths).</i>	<i>Phthisis Death Rate (excluding Asylum Deaths).</i>
1895	70	56	—	1·56
1896	58	52	—	1·43
1897	51	42	—	1·31
1898	63	55	—	1·49
1899	56	46	—	1·23
1900	59	52	—	1·38
1901	52	49	—	1·28
1902	62	50	21	1·29
1903	45	36	11	0·91
1904	48	41	27	1·03
Average for 9 years (1895-1903)	57	48·7	—	1·29

This table clearly brings out how largely Consumption figures as a cause of death. When the deaths from other varieties of Tuberculosis are also included the death rate from Tuberculosis, *i.e.*, including Consumption and the other varieties of Tuberculosis, is as much as 1·71 per 1,000. This excludes the Asylum and other deaths of non-residents. That is, out of every 10,000 persons in Colchester over 17 died last year from Tuberculosis. This disease was responsible during 1904 for exactly four times as many deaths as Small Pox, Scarlet Fever, Typhoid Fever and Diphtheria put together.

Every effort should therefore be made to combat this disease, particularly when it is remembered that this is a most preventable disease.

Since July 1st, 1903, all houses in which a death from Consumption has taken place have been visited, and in almost every case the premises disinfected. In this way much infectious material is rendered harmless.

A much more important matter, however, is to prevent living sufferers from Consumption from infecting others. It is now quite well recognized and known that such patients are sources of infection to others, mainly by the expectoration which they spit up and which contains very large numbers of the germs of Consumption, the tubercle bacillus. Such patients will spread the disease unless restrictions are enforced.

Some form of notification is obviously necessary. I brought the matter before the Sanitary Committee and also opened a discussion on the subject at a meeting of the Colchester Medical Society. The latter Society unanimously passed a resolution in favour of voluntary notification.

Voluntary notification of Consumption was adopted by the Council, and came into force on June 15th, 1904, the usual notification fees being paid.

Since that date, *i.e.*, for about six months, 31 cases have been notified. This can only be considered a small proportion of the cases of Consumption existing in the Borough, but even with the notification of part of the total number of cases much good, I believe, has been effected.

Every case is visited and careful inquiries made as to their family history, how the infection was acquired, the precautions being taken, the sanitary condition of the house, etc.

The exact ways the disease is spread are then explained to the patient if the medical attendant has not already done this, and printed instructions are left with the patient.

If necessary the house or room is disinfected to give the patient a fresh start with uninfected surroundings. Any unsanitary conditions are remedied. If the patient is too poor to provide himself with a pocket spittoon one is given to him.

In a few cases the patients, or their friends, had no idea that they were infectious, and not infrequently no precautions whatever were being taken. Thus in some cases the patients were spitting about in the streets or elsewhere, handkerchiefs were sent to the wash without any previous treatment, patients were sleeping with others and in ill-ventilated houses, etc.

As an illustration of how the disease may be spread the following may be instanced :—
M.J. slept for some time with a consumptive brother in the same bed, and himself acquired Consumption. He worked as an engineer in some small works in Colchester, spitting on the ground while at work and elsewhere, and taking no precautions to prevent infection. A boy of 17 years worked in the same engineer's shop, and although he was previously quite well and there was no history of any Consumption in his family or in his house, developed the disease some time after he had been associated with M. J. This is an illustration of occupational infection.

The same man M. J. moved twice within the year, and so probably infected both houses, and after he left the one engineering firm he obtained a post in another and larger firm. One case of infection from this man has come under my notice, but there may be many others as yet unknown to me, or which on account of removals, etc., have become so indirect that they cannot be traced.
This man M. J. has now been notified to me and is taking the simple precautions necessary, while the second house he left was disinfected before he left it.

Illustrations quite similar to this can be furnished by all Medical Officers of Health who have experience of notification of Consumption.

In regard to notification of this disease its value is largely in proportion to the earliness of the stage of the disease at which it is made.

It is true that the late and dying cases are the most infectious, but the range of their infection is but limited, while the area capable of being infected by a consumptive who is well enough to go to work is extensive, and the duration of that period of infection sometimes prolonged.

From this point of view the notifications received are disappointing. Of the 31 received, 16 were alive at the end of January, 1905; that is, 10 after 6 months' notification, 2 after 5 months, and 4 after less than 4 months' notification. 15 have died since notification, of these 2 died within a week of notification, 2 in less than a month, 4 in less than 2 months, 2 in less than 3 months, 3 in less than 4 months, and the remaining 2 in less than 6 months.

Early recognition of the disease is also the most essential fact in the cure of the patient, and it is to be hoped that the facilities offered for free examination of the expectoration of suspected cases will be more widely utilised.

Much yet remains to be done to restrict the ravages of Tuberculosis both by general and special methods.

INFECTIOUS HOSPITALS.

During the year 197 patients were admitted to the Infectious Hospitals.
The admissions for each disease, and for each month is shown in the following table :—

Month.	Small Pox.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Total.
January	—	3	1	1	5
February	1	14	1	1	17
March	—	14	4	1	19
April	—	13	0	1	14
May	—	15	3	—	18
June	—	13	2	—	15
July	—	9	2	—	11
August	—	1	1	2	4
September	—	26	1	4	31
October	—	16	10	—	26
November	—	12	3	—	15
December	—	18	2	—	20
Year 1904.	1	154	30	10	195

In addition, a diphtheria contact harbouring the bacilli, and a child sent in as Scarlet Fever, but who died of Septicaemia and did not have Scarlet Fever, were also admitted.

Monthly Notifications.

<i>Month.</i>	<i>Small Pox.</i>	<i>Scarlet Fever.</i>	<i>Diph- theria.</i>	<i>Typhoid Fever.</i>	<i>Chicken Pox.</i>	<i>Puer- peral Fever.</i>	<i>Erysipelas</i>	<i>Phthisis.</i>	<i>Total.</i>
January	—	3	3	4	6	1	5	—	22
February	1	18	4	1	11	—	4	—	39
March	—	18	4	2	6	—	2	—	32
April	—	21	0	2	8	—	0	—	31
May	—	24	4	0	16	—	3	—	47
June	—	17	8	0	5	—	3	10	43
July	—	13	4	0	5	—	3	10	35
August	—	7	3	2	2	1	2	3	20
September ..	—	37	1	5	1	1	1	4	50
October	—	37	11	0	13	—	8	1	70
November ..	—	33	4	0	21	—	6	1	65
December ..	—	29	10	1	22	—	1	2	65
Year 1904 ..	1	257	56	17	116	3	38	31	519

The percentage of cases removed to Hospital for the following Infectious Diseases was, excluding the Military cases, as follows:—

Small Pox 100, Scarlet Fever 64, Diphtheria 75, Typhoid Fever 62 per cent.

Of the 8 deaths in the Infectious Hospital, 3 were from Scarlet Fever, 3 from Diphtheria, and 2 from Typhoid Fever.

The average duration of stay in Hospital was 49 days for each case of Scarlet Fever, 33 days for Diphtheria, and 50 days for Typhoid Fever.

Considerable improvements have been effected during the year in regard to the Infectious Hospital. The whole area has been fenced or wired in; a Porter's Lodge has been erected, and a man and his wife installed. The former is in charge of all the machinery of the Hospital.

A Steam Disinfector has been built and put in use during the year. It is a modified Washington Lyon pattern, made by Messrs. Manlove, Alliott & Co., and is available for disinfecting by steam, infectious articles from the Hospital, and also infectious clothing and bedding conveyed from all parts of the Borough.

The Laundry has been enlarged and is now fitted with modern improvements and with washing and other apparatus worked by steam.

The Wards have been supplied with hot water by means of steam pipes in connection with the boiler which works the Disinfector and Laundry Appliances.

All these improvements were urgently required.

INQUESTS.

I am indebted to Mr. H. Geoffrey Elwes, Borough Coroner, for the following figures:—

<i>Cause of Death.</i>	<i>Males.</i>	<i>Females.</i>	<i>Total.</i>
Accidental	11	5	16
Natural Causes	6	3	9
Suicide	5	1	6
Excessive Drinking	1	0	1
Open Verdict (drowning)	1	0	1
	24	9	33

All 33 inquests were on persons residing in the Borough.

THE MILK SUPPLY OF COLCHESTER.

The condition of the milk supply of a town is a matter of supreme importance. Milk is very readily contaminated, and harmful germs will grow in it with great facility. Such milk when consumed may be a source of much harm, especially to infants and young children. Recently a number of outbreaks of Sore Throat have been traced to infected milk. It is most important therefore to see that the conditions under which it is obtained and distributed, are such as to diminish as much as possible the risk of harmful contamination. I have therefore made a special and extensive inquiry into the whole question of the milk supply of the Borough, visiting personally, accompanied by Mr. Wells, your Inspector of Dairies, Cowsheds, and Milk Shops, every cowshed in the Borough and a large proportion of the dairies and other shops where milk is sold. The rest of the dairies and shops purveying milk were visited by Mr. Wells and specially reported upon to me. All the visits were made between May and August, 1904.

As far as I am aware Colchester is almost unique as a Borough in that the great bulk of the milk consumed is from cowsheds situated within the Borough. Cowsheds, purveyors and consumers are all under the same Sanitary Authority. A small part of the milk consumed comes in from outside the Borough, a little of the milk from cowsheds within the Borough is sent outside, but the great bulk of the milk is milked and consumed within the Borough boundaries. This enables much better supervision to be exercised.

The milk is vended in three different ways.

(1) By the dairies and milk shops, which for the most part only sell milk, butter, and other dairy products.

(2) By general dealers, who also sell milk.

(3) By purveyors of milk alone. These have no proper dairy, and no place where milk can be sold over the counter, but buy the milk direct from the farmers and at once distribute it.

General Dealers. At the time of the inquiry there were 37 such milk sellers registered. They are for the most part small general provision shops, selling only small quantities of milk, very rarely more than 3-4 gallons a day. Most of them receive their milk twice a day. In only a very few of the shops were markedly objectionable substances, paraffin, fish, etc., also sold.

Generally the milk is at once placed in the counter pan of metal or earthenware, in the shop, and sold during the day.

Such pans I have usually found to be clean, but in no instance did I find them covered. In this way dust and dirt are certain to gain access to the milk, and the milk becomes contaminated. Such shops always have a dusty atmosphere. Not only is this the case, but flies, great carriers of filth and infective matters, gain access to the milk and give it another dose of filth.

In this way the causal organisms of infantile Diarrhœa and other diseases may gain access to milk just as they may do, in the house of the consumer, so that an infant consuming such milk runs a double risk, risk of pollution at the shop, as well as risk of pollution in the house.

Some of these shops were kept in a cleanly way, others by no means so.

I think that a byelaw under section 13 of the Dairies, Cowsheds, and Milkshops Order, 1895, should be made enforcing the covering of all milk vessels by all retail milk sellers. Possibly, however, No. 8 of the Regulations passed by you is sufficient for this purpose.

Dairies and Milkshops. There were nine such dairies, and in these the conditions under which the milk was sold were much better. The dairies were on the whole clean and well ventilated, while the milk utensils were properly cleaned. The milk was, however, sold in uncovered vessels. For the most part these dairies had large milk rounds and dealt with large quantities of milk.

Purveyors of Milk. This is kept as a distinct class inasmuch as there was either no dairy for the sale of milk, or it was a very small and unconsiderable part of the business. These men obtained the milk direct from the farmers, and either purveyed it there and then, or did so after taking it to their premises. 14 such milk purveyors were on the register at the time of the inquiry. In addition to these some of the farmers also distributed their own milk (about 11 of them) while two of the general dealers also distributed a certain amount of milk.

Cowsheds. There were, at the time of the inquiry, 26 farms with cowsheds within the Borough. A special inspection was made of every one of them. The number of cows in these sheds is naturally liable to fluctuate, but the number actually present when inspected was 363. The number of cows on each farm ranged from 3 to 30.

As regards the buildings, with two or three exceptions, these were satisfactory, some being eminently so. For most of them the air space was sufficient, but in 3 instances, the sheds were overcrowded, each cow having considerably less than the 800 cubic feet prescribed by the Regulations. Notices were served in these cases.

The water supply for washing the cans and also for the cows was usually satisfactory, but not in every case.

Not only is it important to have good cowsheds, but it is especially essential that the sheds should be kept clean. 18 of the cowsheds were clean or fairly clean, 4 were not clean or kept clean, and 4 were in a very dirty condition. Informal notices were served on these, and all the 4 farmers whose sheds were very dirty were warned that a further breach of the Regulations would be reported to the Sanitary Committee, and that they were liable to a £5 fine.

In regards to the actual milking of the cows, I am not satisfied that in all cases sufficient care is taken to see that the udders are properly cleaned before milking, and I regret that the Regulations in force in the Borough do not definitely prescribe this, and also cleanliness of the hands of the milker. Such precautions are inserted in the Model Regulations of the Local Government Board.

The position of manure heaps just outside the cowsheds was almost universal, but cannot be considered satisfactory.

In all cases the milk was strained, but in none was it cooled artificially. This is a very important matter if the milk has to be sent long distances, to London, etc., but unimportant here.

The most satisfactory part of the whole inquiry was the fact that practically all the milk was removed at once and distributed. One of the chief dangers that consumers of milk run is that the milk becomes contaminated in the milking, etc., and that then these organisms multiply at an enormous rate, and render the milk harmful. This is especially the case for the milk supply of large cities where the milk comes from great distances.

In Colchester all the milk is consumed, or at least distributed, the day it is obtained, a very great advantage.

On the whole the cowsheds of the Borough compare favourably with those of other parts of the country, and when the few farmers who do not recognize their responsibilities are levelled up to the others, will be satisfactory.

In addition to this special inspection, carried out by Mr. Wells and myself, the cowsheds, dairies, and milkshops are systematically inspected by Mr. Wells. This is most necessary.

During the year the Dairies, Cowsheds, and Milk Shops Orders of 1885, 1886, and 1899, together with the Regulations passed by the Colchester Council in 1888 were printed together as a neat booklet, and sent to each cowkeeper and milk seller on the Register. They cannot now plead ignorance of their provisions, or of their responsibilities under them.

The important question as to the existence of *Tuberculosis* among the cows, and the existence of tubercle bacilli in the milk was not considered in the above inquiry, no bacteriological samples being taken, while I had no authority given me to take a Veterinary Inspector and examine the cows. This is however a question of much importance, and worthy of direct inquiry.

Another special inspection carried out by me during the year was an examination into the paving, or need for paving, of all the courts and yards of the Borough. This was carried out at the request of the Sanitary Committee and a report was presented to them in February, 1904. 66 areas were inspected.

Offensive Trades. Special action was taken in regard to one factory in which an offensive trade was carried on. Numerous complaints were received that this factory was causing serious nuisance. I visited it several times, and the whole of the processes were inquired into. The trade carried on is that of a leather dresser. The matter was fully reported to the Sanitary Committee, and action was taken under section 114, Public Health Act, 1875. In consequence of this, the processes complained of were discontinued and the nuisance ceased. Part of the work was subsequently recommenced, but no complaints have been received.

PUBLIC HEALTH LABORATORY.

Bacteriology and, to a lesser extent, Chemistry are of such essential and often invaluable aid to reliable Public Health Work, that conveniences for such work are every day becoming more and more essential. In the large towns in which Laboratories are established in connection with teaching Universities and Colleges the work, by arrangement, is often done there. In other towns and in many of the smaller towns Laboratories in connection with the Public Health Department are being built. With Medical Officers of Health experienced in such work this is both more economical, and better from the Public Health point of view since it is obvious that it is better to be all under the one head, while the laboratory is always available. Such work, however, requires very special knowledge and experience. The Laboratory in Colchester, under my direction, is well fitted up for all the purposes required, and has been of the very greatest use in my routine and special work. It is not possible to accurately indicate its very great value by figures, but the following is a summary of some of the work done during 1904:—

(1). Swabs from suspected cases of Diphtheria and cases before discharge—during the year 366 such swabs were examined, 83 being from medical men, and 282 personally taken by myself. 80 of the 83 swabs from medical men were from suspected cases of the disease, of these 17 contained Diphtheria bacilli and were notified as cases of Diphtheria, the others showed no Diphtheria bacilli.

(2). Blood from suspected cases of Typhoid Fever. This examination, the so-called Widal's test, is probably the most reliable test we possess to determine whether a case is one of Typhoid Fever. Every medical man knows how difficult the early diagnosis of Typhoid Fever usually is, and this bacteriological method of testing is very reliable, and is in extensive use all over the country. The *early* diagnosis of Typhoid Fever is important from the public health as well as the personal point of view. This test is now done in the Laboratory free of charge, medical men only having to send a drop of the patient's blood. During the year 32 specimens of blood were examined from suspected cases of Typhoid Fever.

(3). It is important that Typhoid Fever cases should not be discharged with Typhoid bacilli in their discharges, to again spread the disease. This is quite possible unless bacteriological examinations are made. 12 such examinations were carried out.

(4). During the year 15 surface wells were examined bacteriologically, chemically or both. Two were condemned and for one, the whole well was properly rebuilt and lined.

In addition a number a samples of the town water were examined for the Waterworks Department.

(5). In addition the Laboratory has been used for examining specimens of sputum for tubercle bacilli, for testing disinfectants, for examining suspected cockles, tidal mud, flies from houses with infantile diarrhoea, etc.

A large amount of work has been carried out in connection with workshops and work places included under the above. A number of details are given in Mr. Wells' report which is appended, and the following particulars are given here in the form prescribed by the Chief Inspector of Factories, Home Office.

FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES AND HOMEWORK.

1.—INSPECTION.

Including Inspections made by Sanitary Inspectors.

<i>Premises.</i>	<i>Number of</i>		
	<i>Inspections.</i>	<i>Written Notices.</i>	<i>Prosecutions.</i>
Factories (Including Factory Laundries) ..	4	2	..
Workshops (Including Workshop Laundries)	172	39	..
Workplaces	5	3	..
Homeworkers' Premises	1182	147	..
Total	1543	191	..

2.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
<i>Nuisances under the Public Health Acts :—</i>				
Want of cleanliness	46	44	..	..
Want of Ventilation	7	7	..	..
Overcrowding	7	7	..	..
Want of drainage of floors .. .. .	..	..	..	..
Other nuisances	295	281	..	..
*Sanitary accommodation {	insufficient	4	3	..
	unsuitable or defective	4	4	..
	not separate for sexes	1	0	..
<i>Offences under the Factory and Workshop Act :—</i>				
Illegal occupation of underground bakehouse (S. 101) .. .. .	..	..	..	..
Breach of special sanitary requirements for bakehouses (SS. 97 to 100) .. .. .	..	..	..	..
Failure as regard lists of outworkers (S. 107)	1	1	..	..
Giving out work to be done { unwholesome (S. 108) ..	..	..	..	..
in premises which are { infected (S.110)	..	..	..	..
Allowing wearing apparel to be made in premises infected by scarlet fever or smallpox (S. 109) .. .. .	..	..	..	..
Other offences .. .. .	..	..	..	..
Total	365	347	..	..

* Section 22 of the Public Health Acts Amendment Act, 1890, has been adopted by the Council. The order of the Secretary of State is followed.

3.—OTHER MATTERS.

<i>Class.</i>	<i>Number.</i>
Matters notified to H.M. Inspectors of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (S. 133) ..	7
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act (S. 5) ..	4
Other .. .. .	..
Underground Bakehouses (S. 101) :—	
In use in 1903	3
Certificates granted { in 1903	1
{ in 1904 .. .. .	..
In use at the end of 1904	1
Homework :—	
<i>Lists of Outworkers*</i> (S. 107) :—	
Lists received	67
Addresses of outworkers { forwarded to other Authorities	1791
{ received from other Authorities	10
<i>Homework in unwholesome or infected premises :—</i>	
Notices prohibiting homework in unwholesome premises (S. 108) ..	0
Cases of Infectious disease notified in homeworkers' premises ..	25
Orders prohibiting homework in infected premises (S. 110)	25
Workshops on the Register (S.131) at the end of 1904 :—	
Bakehouses	44
Domestic workshops	20
Laundries	2
Other workshops	155
Total number of workshops on Register	221

There has been a decline in the number of workshops on the Register as compared with last year. The workshop industries are almost entirely clothing and boot manufacture.

During the year 226 visits were paid to workshops, 177 separate workshops being inspected. Two workshops were closed as being unsuitable.

In regard to *Home Work* a great deal of careful inspection has been carried out by Mr. Humphreys, your assistant inspector, 1182 Homeworkers premises being inspected during the year.

RAINFALL RETURNS.

The influence of rainfall upon the general healthiness of the community is a well recognised one. I am glad therefore to be able to furnish the following table.

The column marked rainfall at Osborne Street Depôt was kindly supplied to me by Mr. Goodyear, all the other figures were kindly furnished to me by S. F. Hurnard, Esq., and were recorded, at Lexden, by means of a five inch certified Snowdon gauge 90 feet above sea level. Year 1904.

* The Lists should be received twice in the year. The year's figures required in the Table are then obtained by adding together the two half-yearly totals.

The figures for the Osborne Street Depôt are almost constantly below those recorded at Lexden.

Month.	Total Depth (inches).		Greatest fall in 24 hours (Lexden).		Number of days on which 0·01 inches or more fell.	Rain fall for 1903. (Lexden.)
	Lexden.	Osborne Street Depôt.	Depth.	Date.		
January	2·14	1·93	0·30	30th	19	1·77
February	2·16	1·87	0·35	12th	18	0·45
March	1·55	1·41	0·27	2nd	16	1·32
April	0·92	0·77	0·35	12th	12	1·88
May	1·63	1·43	0·27	31st	14	3·35
June	0·87	0·75	0·26	14th	7	3·16
July	3·07	2·32	1·47	26th	10	3·90
August	1·30	1·29	0·53	31st	9	3·87
September ..	0·84	0·82	0·24	6th	11	2·04
October	0·75	0·62	0·20	16th	11	5·01
November ..	1·27	1·18	0·52	7th	12	1·98
December ..	1·91	1·73	0·54	6th	16	1·20
Total	18·41	16·12	..	..	155	29·93 inches

The Statistical Tables which are appended are in the form prescribed by the Local Government Board, Table II. being omitted.

TABLE I.

Vital Statistics of Whole District during 1904 and previous Years.

Year.	Population estimated to Middle of each year.	Births.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non-Residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	Net Deaths at all Ages belonging to the District.	
		Number.	Rate.*	Under 1 year of age.		At all Ages.					Number.	Rate.*
				Number.	Rate per 1,000 Births registered	Number.	Rate.*					
1895	36,096	1035	28·6	193	186	719	19·9	112	..	..	..	..
1896	36,491	1005	27·5	134	133	520	14·2	86	12	0	508	13·9
1897	36,843	965	26·1	120	124	577	15·6	83	24	1	554	15·03
1898	37,222	969	26·03	135	139	625	16·79	103	25	1	601	16·1
1899	37,605	985	26·1	133	135	601	15·9	101	32	0	569	15·1
1900	37,991	1000	26·2	120	120	597	15·7	99	17	0	580	15·2
1901	38,383	936	24·3	132	141	643	16·7	136	12	1	632	16·4
1902	38,778	943	24·3	93	98	555	14·3	121	40	0	515	13·2
1903	39,300	1021	25·97	128	124	536	13·64	102	38	1	499	12·7
Averages for years 1895-1903	37,634	984	26·1	132	134	597	15·86	105	25	..	557	14·8
1904	39,700	1033	26·02	182	176	670	16·87	117	41	1	630	15·86

Total population at all ages, 38,373.

Number of inhabited houses, 7771.

Average number of persons per house, excluding the military population, 4·5.

Area of District in acres (exclusive of area covered by water), 11,324.

} At census of 1901.

* Rates in these columns calculated per 1000 of estimated population.

TABLE III.

Cases of Infectious Disease notified during the Year 1904.

<i>Notifiable Disease.</i>	<i>Cases Notified in Whole District.</i>							<i>Total Cases Notified in each Locality.</i>				<i>No. of Cases removed to Hospital from each Locality.</i>			
	<i>At all Ages.</i>	<i>At Ages—Years.</i>						<i>North.</i>	<i>South.</i>	<i>East.</i>	<i>West.</i>	<i>North.</i>	<i>South.</i>	<i>East.</i>	<i>West.</i>
		<i>Under 1.</i>	<i>1 to 5.</i>	<i>5 to 15.</i>	<i>15 to 25.</i>	<i>25 to 65.</i>	<i>65 and upwards.</i>								
Small-pox	1	—	—	—	1	—	—	—	1	—	—	—	1	—	—
Cholera	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria	56	2	16	25	7	6	0	10	32	10	4	7	14	6	3
Membranous Croup..	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Erysipelas	38	1	1	3	4	27	2	7	9	14	8	—	—	—	—
Scarlet Fever	257	3	57	176	14	7	0	62	83	50	62	44	43	20	47
Typhus Fever	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric Fever	17	—	—	4	6	7	—	2	4	8	3	1	2	7	—
Relapsing Fever....	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Continued Fever ..	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal Fever....	3	—	—	—	1	2	—	0	2	1	0	—	—	—	—
Phthisis	31	2	1	—	3	24	1	6	6	9	10	—	—	—	—
Chicken-pox	116	8	41	64	2	1	—	12	67	13	24	—	—	—	—
Totals	519	16	116	272	38	74	3	99	204	105	111	52	60	33	50

TABLE IV.

Causes of, and Ages at, Death during Year 1904.

<i>Cause of Death.</i>	<i>Deaths of the subjoined ages of Residents whether occurring in or beyond the District.</i>							<i>Deaths of all ages of Residents belonging to Localities whether occurring in or beyond their District.</i>				<i>Total Deaths whether of Residents or Non-Residents in Public Institutions in the District.</i>
	<i>All Ages.</i>	<i>Under 1 Year.</i>	<i>1 and under 5.</i>	<i>5 and under 15.</i>	<i>15 and under 25.</i>	<i>25 and under 65.</i>	<i>65 and upwards.</i>	<i>North.</i>	<i>South.</i>	<i>East.</i>	<i>West.</i>	
Small-pox .....	..	..	..	..	..	..	..	..	..	..	..	..
Measles	12	2	8	2	..	..	..	1	7	4	..	..
Scarlet Fever.....	6	2	3	1	..	..	..	3	2	..	1	3
Whooping Cough	17	14	3	..	..	..	..	4	2	5	6	..
Diphtheria & Membranous Croup	7	1	4	2	..	..	..	1	2	3	1	3
Croup .....	..	..	..	..	..	..	..	..	..	..	..	..
Fever { Typhus.....	..	..	..	..	..	..	..	..	..	..	..	..
Enteric.....	4	..	..	..	2	2	..	1	2	1	..	2
Other continued .....	..	..	..	..	..	..	..	..	..	..	..	..
Epidemic Influenza	1	..	..	..	..	1	..	..	..	..	1	..
Cholera .....	..	..	..	..	..	..	..	..	..	..	..	..
Plague .....	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea	80	54	23	..	..	2	1	9	28	34	9	..
Enteritis.....	8	5	1	..	..	..	2	..	3	3	2	..
Puerperal Fever	2	..	..	..	..	2	..	..	1	1	..	..
Erysipelas	2	1	..	..	..	1	..	2	..	..	..	..
Other Septic Diseases	4	..	1	..	2	1	..	1	2	1	..	4
Phthisis (Pulmonary Tuberculosis)	41	..	..	..	11	27	3	4	18	8	11	16
Other Tubercular Diseases	27	12	9	4	..	1	1	9	11	3	4	11
Cancer, Malignant Disease	38	..	..	..	1	22	15	5	12	10	11	9
Bronchitis	52	14	5	..	..	6	27	11	17	16	8	10
Pneumonia	18	5	5	..	2	4	2	3	2	6	7	2
Pleurisy .....	..	..	..	..	..	..	..	..	..	..	..	1
Other Diseases of Respiratory Organs	3	..	1	1	..	..	1	2	..	1	..	..
Alcoholism, Cirrhosis of Liver..	5	..	..	..	..	3	2	2	1	1	1	..
Venereal Diseases .....	..	..	..	..	..	..	..	..	..	..	..	..
Premature Birth	20	20	..	..	..	..	..	1	6	7	6	1
Diseases and Accidents of Parturition	1	..	..	..	..	1	..	..	..	1	..	..
Heart Diseases	50	..	..	..	2	25	23	17	16	10	7	12
Accidents	13	..	2	4	..	6	1	2	5	3	3	5
Suicides	5	..	..	..	..	5	..	1	3	1	..	1
All other causes.....	213	52	9	6	13	53	81	36	67	66	46	37
All causes	629	182	74	20	33	162	159	115	207	185	123	117

The Borough Surveyor submits his Report to you as follows :—

I have the pleasure of submitting my Report as to work done in my Department during the year 1904.

Glazed Stoneware Pipes have been laid as follows :—

185 lineal feet of 15in.	..	North Station Road.
5300 " 12in.	..	Lexden Road and Fields.
275 " 12in.	..	Spring Lane.
283 " 9in.	..	"
238 " 12in.	..	" (The Chase).

410	lineal feet of 12in.	..	Maldon Road.
6887	„	9in.	.. Lexden Road.
1563	„	9in.	.. Lexden Straight Road.
1320	„	9in.	.. Cherry Tree Road.
2890	„	9in.	.. Church Lane.
634	„	9in.	.. Parson's Hill.
1582	„	9in.	.. Colne Road.
300	„	9in.	.. King Coel Road.
760	„	9in.	.. Hythe Road.
410	„	9in.	.. Viaduct Road.
1380	„	9in.	.. Irvine Road.
190	„	9in.	.. Capel Road (extension).
230	„	9in.	.. Athelstan Road „
374	„	6in.	.. Cherry Row.
126	„	6in.	.. Chitts Hills.
294	„	6in.	.. Colne Road (The Chase).

25,631 lineal feet.

Total—4 miles 6 furlongs 184 yards.

The total length of sewers now in the Borough is about 55 miles 184 yards.

54 manholes, 17 lampholes, and 11 flush-pipes have been constructed.

160 plans have been approved by the Council, representing 188 dwelling houses, 6 public buildings, 53 additions to buildings, and 59 other buildings.

300 dwelling-houses, and 118 other buildings have been erected under my supervision.

About 500 houses, old and new, have been provided with new drains and sanitary fittings.

Buildings and drains have necessitated 1,400 inspections, and all new drains have been subjected to a water test before being passed for use.

1,970 lineal feet of new roads have been constructed, and 790 lineal feet of private streets have been made up.

7,180 lineal feet of kerbing, 1,650 lineal feet of channelling, 2,400 square yards of cement paving, and 980 square yards of tar paving have been laid down in various parts of the Borough.

The Council have caused to be removed 10,663 loads of house refuse, 2,397 loads of nightsoil, 1,144 loads of slop from street gullies, 7,261 cart-loads of road scrapings, and 13,459 truck-loads of horse droppings, straw, paper, etc., from streets and roads.

3,500 loads (approximately) of refuse have been removed from the Camp and Barracks and other Government properties by the Contractor.

9,435,750 gallons of water have been used for street and road watering.

397,543,020 gallons of sewage have been pumped into the tanks at the Sewerage Outfall Works: equal to an average daily flow of 1,089,159 gallons. After precipitation a residue has been left of 20,975 tons of liquid manure, which has been treated with lime and reduced by the process of pressing to 4,195 tens (approximately) of portable manure (or sludge), all of which has been disposed of to the farmers in and around the Borough.

The 83½ miles of main and other roads have been kept in an efficient state of repair with granite, rag, flint, and local stone, and the footpaths have been well maintained.

The Waterworks Superintendent reports as follows:—

I have pleasure in submitting my Report, giving particulars of the work of the Waterworks Department for the year 1904. The Council's mains have been extended 4,410 yards, making a total length of about 45½ miles.

175 additional houses have been connected to the Council's mains during the year, making a total of 8,619 inhabited and uninhabited houses supplied, exclusive of factories, stables, and trade and business premises, and the Stanway Rural District Council. There are of the latter 205, making the total number of supplies 8,824, *exclusive of the Garrison*.

Taking an average of 4½ people per house, and allowing for the uninhabited houses, we get an *estimated civilian population* of 38,245 receiving the Council's water, which does not include the said Rural District Council, and trade, etc. supplies.

The daily average of the Military supplied at the present time is 5,193 persons.

There are 392 hydrants connected to our mains for fire extinguishment, road watering and making, wash-out and other purposes.

During the year in question our Inspectors reported 2,792 houses at which water was being wasted through defective fittings, 2,485 of these defects were remedied without any charge being made to the owners, and in the other 307 cases notices were sent which caused the necessary repairs to be executed.

The quantity of water pumped into the Water Tank, Balcerne Hill during 1904 was 271,992,000 gallons, exclusive of the surface spring water supplied by an entirely separate system to the Great Eastern Railway Company, which amounted to 14,328,000 gallons.

The average consumption of water per head per day of the population supplied, *including the Military*, and also water for trade and business purposes, road watering, sewer flushing, fire extinguishment, etc., was about 17 gallons, which I venture to think is a satisfactory result with a constant supply.

Mr. Wells, the Sanitary Inspector, submits his Report:—

I have the honour of submitting my Ninth Annual Report upon the work carried out in my Department during the year 1904.

The number of complaints in reference to nuisances have again been large; a prompt enquiry is made into the cause of such complaints, the sanitary condition of the houses, and those contiguous are examined, and where any insanitary conditions are found to exist, notices are served either upon the owners or the occupiers to abate the various nuisances discovered, and to do such works as are necessary, so as to prevent recurring nuisances.

The usual informal notice served upon occupiers of premises to keep their water-closets clean and free from accumulations, the removal of manure and other offensive matters from the premises, and the keeping of any animals in a cleanly state, has been sufficient to cause a speedy abatement of the nuisance.

Drainage Work, etc.—452 sanitary notices have been served. The following up of all the orders issued takes up much time, and before the work is finally completed many visits have to be made in order to see that the work is done satisfactorily. When large sums of money have to be spent on drainage and other repairs to houses, it is often necessary to meet the owners upon the premises and explain the works that are necessary in order to comply with the notice. This, I find, is a very satisfactory way of getting the work executed, and I am again glad to be able to report that in no case was it necessary to institute legal proceedings to procure the abatement of a nuisance.

Detailed particulars of the Sanitary work carried out are given in statement A.

INFECTIOUS DISEASES AND DISINFECTION.—All the cases of infectious disease notified have been visited either by your Medical Officer of Health or myself. Immediate and prompt measures are taken to remove any case to the Infectious Diseases Hospital if without proper lodging or accommodation, or the isolation was not sufficient to prevent the spread of the disease. Printed instructions are left at each house in which the case occurs, special instructions are also given when the case is treated at home, so that the proper isolation of the patient may be adequately carried out. Subsequent visits are made in order to see if the instructions given are complied with.

The sanitary arrangements of the premises are also inspected, and any insanitary conditions dealt with. Disinfectants are issued daily from my office, if a satisfactory reason is given for what purpose required. After the removal or convalescence of the patient, the house and all the articles known to have been exposed to infection have been disinfected. 619 houses, 836 articles of clothing, including those from premises occupied by home workers, and 36 Library books, which I have found upon my first visit to infected houses have been disinfected. 460 notices have been sent to the Head Masters and Mistresses of all the Public Elementary Schools, and to the Superintendent of all Sunday Schools in the Borough, informing them of the name and address of any child suffering from a notifiable infectious disease, so that any child from an infected house attending such school may be excluded therefrom, until such time as the house has been disinfected or declared free from infection. Notices are also sent to the Librarian of the Public Library, and those connected with the Day or Sunday Schools, so that books may not be given out to those in infected houses.

TENTS, VANS, SHEDS, OR SIMILAR STRUCTURES.—I have visited and inspected a number of vans used as dwellings, whenever it came to my knowledge that any had entered the Borough. Attention is always directed to ascertain if any overcrowding exists, or any sickness of an infectious nature among the inmates. A case of measles was reported to exist in a van to which was attached a shooting gallery. Acting under the instructions of the Medical Officer of Health, the van, together with the patient, was removed to a safe part of the ground, and subsequent visits were made to see if the instructions given were carried out, finally the van, and all articles therein, were thoroughly disinfected.

THE REGISTERED COMMON LODGING HOUSE has been regularly visited, it is kept clean, and its general arrangements satisfactory. I have cautioned the occupier to immediately report any suspicious case of sickness to the Medical Officer of Health or myself, as Common Lodging Houses are often the medium by which Small Pox and other infectious diseases are spread. I am pleased to report that no case of disease was reported from the above house during the year.

HOUSE-TO-HOUSE INSPECTION.—I am not able to report that much house-to-house inspection as such has been carried out, owing to the continued prevalence of Scarlet Fever during the year, but in connection with complaints, special inspections, house-to-house,

and the houses inspected in connection with the home workers Order under the Factory and Workshop Act of 1901, no less than 3,017 houses have been inspected, and 452 notices served to abate nuisances, and 544 nuisances abated. Of the number of houses inspected, 8 were found to be in a dilapidated condition, these were inspected by the Medical Officer of Health and myself, and notices were served upon the owners to remedy the defects, and 7 of the houses were placed in habitable repair, and one was closed. Three houses reported upon in 1903 were also closed by the owner in order to avoid the expense of re-draining the premises and executing the necessary repairs to render them fit for human habitation.

STATEMENT A.

Complaints received	550
Visits made to slaughterhouses.	251
Visits made to bakehouses	165
Dairies and milkshops inspected	82
Cowsheds inspected	59
Workshops inspected.	64
Workshops cleansed	52
Houses cleansed	6
Houses disinfected.	619
Overcrowding abated.	8
Houses placed in habitable repair.	7
Houses closed.	4
Wells sunk, or improved supply of water afforded.	1
Wells cleansed or repaired	2
Defective pumps repaired.	1
Leaky taps and fittings repaired where drawing from public mains	38
Houses connected with sewers	4
Privies abolished	8
Privies converted into water closets.	6
New closets built	12
Cesspools abolished	7
New drains laid	19
Disconnection syphons fixed.	10
Disconnection chambers built	10
Fresh air inlet pipes fixed.	9
Foul air exit pipes fixed	15
Trapped yard gullies fixed	45
Old drains abolished	11
Drains unstopped	112
Drains repaired	38
Closets unstopped	79
New closet pans or apparatus fixed	27
Water supply for closets provided	17
Water supply provided for domestic purposes.	3
Rain water pipes disconnected from drains.	15
Rain water pipes or gutters renewed or repaired	3
Covers fixed to cesspools	1
Ash-pits abolished	15
Ash-bins provided	30
Manure and offensive matter removed.	104
Ventilation provided	9

Privies and W.c's repaired	39
W.c.'s supplied with water	2
Cisterns repaired, cleansed or re-covered.....	2
Animals improperly kept or removed	233
Seizure of unsound meat, etc.	1
Nuisances detected or reported.....	524
Nuisances abated	544
Notices served	452
Summonses taken out.....	2
Convictions	1
Bell, or other insanitary traps abolished	16
Sink waste pipes trapped, or disconnected from drains.....	6
Other blemishes abated	156
Defects reported to Borough Surveyor.....	66
Yards paved	28
Medical Officer of Health cases attended.....	491

DRAIN TESTING.

I have received numerous applications from the occupiers of premises and others for the smoke test to be applied to the drains of their premises, the defects discovered (as given below) by such means clearly prove the value of this method of examination.

STATEMENT B.

Shewing locality of sewer gas escapes.

Into kitchens and sculleries	1
„ basement kitchens and cellars	4
„ pantries	1
„ lobbies and other parts of house	4
„ internal water closets	3
„ external water closets	4
From defective drains	9
„ Heads and joints of rain water pipes	3
„ Joints of external soil pipes.....	11
„ Defective internal soil pipes.....	1
„ Defective traps in yards	4

FACTORY AND WORKSHOP ACT, 1901.—A considerable amount of work has been carried out during the year under the above-named Act. The number of workshops on the register, including domestic workshops is 221, the number of workshops inspected, including bake-houses, is 181, and 226 visits have been made in connection with them. A large number of defects have been discovered by the Inspector. These are shown in statement C, which gives in detail a summary of the matters dealt with. The number of home-workers premises inspected is 1,182, this includes 61 shirt-makers, 13 board tailors, 9 button-holers, and 22 bootmakers. 191 sanitary notices have been served either upon the owner or occupier to remedy such defects as were found to exist. 67 lists have been received in accordance with the above Act, and special lists, giving the name and address of each home worker residing outside the Borough has been prepared and sent from my office to the various rural and urban Councils in which the home workers reside. There are about 1,000 home workers in the Borough, and 948 outside.

STATEMENT C.

To cleanse workshops.	46
To clear choked drains and W.c's.	46
To repair defective drains.	6
To repair water-closets	16
To renew broken and defective closet pans.	14
Water closets supplied with water	1
To abolish foul, dilapidated privies	2
To build disconnecting chambers.	3
To fix disconnecting syphons.	3
To fix foul air exit pipes	3
To lay new drains	3
To build new closets.	3
To fix trapped yard gullies	12
To abolish bell and other insanitary traps	6
Waste of water from leaking taps and fittings	25
Other blemishes abated	59
To remove foul accumulations	10
Animals improperly kept	51
To cleanse dirty houses.	2
Unregistered workshops	7
Premises unfit to be used as a workshop	1
Workshops closed	2
To abate overcrowding in workshops	3
To abate overcrowding in home workers room	4
To provide ventilation	7
Ventilating pipes repaired	1
To abolish foul ash-pits.	5
To provide sanitary dust-bins	6
To pave unpaved yards.	6
To disconnect rain water pipes from drains.	6
To provide proper and suitable watercloset accommodation for shops and workplaces.	4

STATEMENT C.

To cleanse workshops.	46
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To repair defective drains.	6
To repair water-closets	16
To renew broken and defective closet pans.	14
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To abolish foul, dilapidated privies	2
To build disconnecting chambers.	3
To fix disconnecting syphons.	3
To fix foul air exit pipes	3
To lay new drains	3
To build new closets.	3
To fix trapped yard gullies	12
To abolish bell and other insanitary traps	6
Waste of water from leaking taps and fittings	25
Other blemishes abated	59
To remove foul accumulations	10
Animals improperly kept	51
To cleanse dirty houses.	2
Unregistered workshops	7
Premises unfit to be used as a workshop	1
Workshops closed	2
To abate overcrowding in workshops	3
To abate overcrowding in home workers room	4
To provide ventilation	7
Ventilating pipes repaired	1
To abolish foul ash-pits.	5
To provide sanitary dust-bins	6
To pave unpaved yards.	6
To disconnect rain water pipes from drains.	6
To provide proper and suitable watercloset accommodation for shops and workplaces.	4

